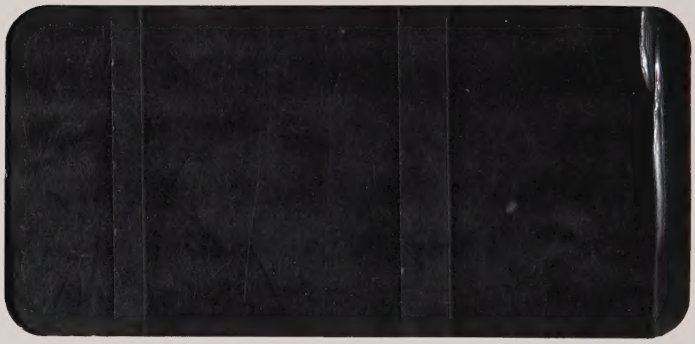
MODEL 7600
TEMPERATURE CHAMBER
MANUAL

DELTA DESIGN
INC.

SAN DIEGO, CALIFORNIA

MP MASTER
MA32443



ENVIRONMENTAL CONTROL EQUIPMENT FOR RESEARCH AND INDUSTRY

MODEL 7600
TEMPERATURE CHAMBER
MANUAL

DELTA DESIGN INC

5725 KEARNY VILLA ROAD, SAN DIEGO, CALIFORNIA - TEL (714) 292-5000 - TWX: (910) 335-1215 - CABLE: DELTA

SPECIFICATIONS

TEST VOLUME (H x W x D)	20" x 20" x 25" (50.80 x 50.80 x 68.50 Cm) 5.78 FT^3 (.16M^3)
AIR CIRCULATION	Six 140 CFM Centrifugal Blowers With Baffling To Provide Equal Distribution Throughout The Chamber In A Horizontal Air Flow Pattern.
OUTSIDE CASE DIMENSIONS (H x W x D)	32-1/4" x 34-1/4" x 33-1/2" (81.92 x 87.00 x 85.09 Cm)
INNER LINER	Type 302 Stainless Steel
OUTER CASE	Aluminum
INSULATION	Fiberglas
WEIGHT	265 Lbs. (120.20 Kg)
POWER REQUIREMENTS	240 VAC, 50/60 H_z Single Phase, 20 Amp, 4.75 KW or 208 VAC, 50/60 H_z, Single Phase, 20 Amp 4.75 KW.
CONTROLS	POWER On-Off Switch and Light COOL On-Off Switch and Light TEMPERATURE SET Control MANUAL/PROGRAM Control Switch (MODE)
HEATING ELEMENTS	Six 720 Watt Elements, Total Of 4,320 Watts, Nichrome Wire
COOLING	Liquid Carbon Dioxide (LCO_2) Or Liquid Nitrogen (LN_2)

0-35-2

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PROGRAMMING	Programmable
TEMPERATURE RANGE	-73°C to +315°C with LCO_2 -184°C to +315°C with LN_2
RESETTABILITY	± 0.25°C
TEMPERATURE DEVIATION	± 0.2°C
LINE VOLTAGE STABILIZATION	± 0.5°C for 220 to 240VAC Line Voltage Change ± 0.5°C for 200 to 215 VAC Line Voltage Change
AMBIENT TEMPERATURE COMPENSATION	± 0.02°C/°C
GRADIENT IN TEST AREA (1-1/2" From Walls In Corners And In The Center Of The Test Area)	± 1-1/2°C/100°C Difference, Measured From Ambient
THERMAL IMPEDANCE OF CHAMBER	Approximately 0.275°C/Watt
NULL DETECTOR CONTACT CLOSURE	Temperature Will Be Within 2°C of Final Temperature At 3 Minutes After Closure Occurs.
NULL DETECTOR CONTACT RATING	1 Amp, 240VAC, With Contact Protection Provided By User To Protect Against Inductive Loads.

NOTE:

IT IS RECOMMENDED THAT THIS MANUAL BE READ THOROUGHLY BEFORE CONNECTING EQUIPMENT TO ELECTRICAL POWER SOURCE.

INTRODUCTION

The Delta Design, Inc., Model 7600 chamber is a precision environmental test chamber capable of attaining temperatures from $-184^{o}C$ to $+315^{o}C$ with a minimal temperature deviation of $\pm 0.2^{o}C$.

Temperature control in this chamber is by means of Delta's Solid State Controller, which can be operated manually or thru an external programmer.

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Ordering Replacement Parts

Please include the chamber model number, serial number and the part number as listed in the parts list.

A complete parts list is included as part of this manual.

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1 PRECAUTIONS

1.1 Connect SAFETY PLUG (rear of chamber) when external programmer is not being used. This will preclude any accidental high temperature being obtained if the MODE switch is placed in the PROGRAM position with no programmer connected.

1.2 Ground the case of the chamber to earth ground. When a grounded outlet is not available, use the three-to-two adaptor and connect the green colored "pigtail" to earth ground. The chamber must not be operated without the case grounded.

1.3 Unplug the chamber from all sources of power before attempting any type of servicing or removal of the controller chassis. The case of the triac switch assembly, located on the partition, is at power line potential and extreme care in servicing or calibration must be exercised.

1.4 Do not block the sides of chamber or outlet of controller area on bottom of the chamber for cooling purposes.

1.5 Ensure that the correct type of LCO_2 (liquid carbon dioxide) source is connected to the chamber before operating at low temperature. Recommend standard 50 pound capacity high dry siphon LCO_2 supply. Test the LCO_2 for cleanliness by discharging a quantity of it through a clean white handkerchief. Bits of rust and traces of oil, ice or water indicate contaminated LCO_2 which should not be used.

1.6 Operate the chamber at a temperature of 200°C for an hour after prolonged operation at low temperatures. This restores the efficiency of the insulating material by driving out the moisture which has been condensed out of the air.

WARNING

Liquid oxygen may be formed in the insulation when the chamber is operated at temperatures of -182°C and below. Any mixture of oil and liquid oxygen can be explosive. If oil contamination is suspected, bake the chamber out by operating it at a temperature of 200°C for a period of three hours before taking it to extremely low temperatures.

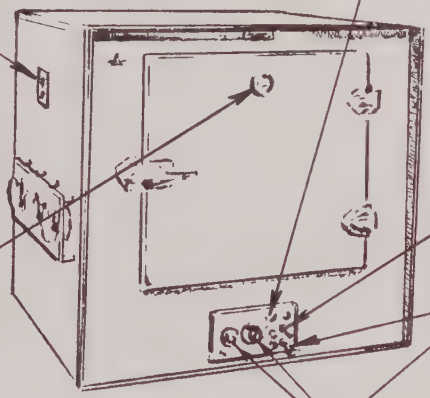
1.7 Do not leave liquid nitrogen trapped in a line (valves closed at both ends) as high pressures will be developed as the liquid absorbs heat and becomes gas.

FAILSAFE ADJUST- LOCATED ON SIDE OF CHAMBER.
TURN TO CHANGE TEMPERATURE AT WHICH FAILSAFE WILL TRIP.
CAUTION: DO NOT LOWER FAILSAFE TEMP. SETTING UNLESS HEAT SWITCH IS ON & FAILSAFE IS OFF.

FAILSAFE LAMP- GLOWS RED WHEN FAILSAFE IS TRIPPED

(5) HEAT SWITCH & LIGHT-- SWITCH ON--ON POSITION ALLOWS CONTROLLER TO APPLY HEAT AUTOMATICALLY TO MAINTAIN SELECTED TEMPERATURE IN CHAMBER RED LIGHT IS ON STEADY WHEN CHAMBER IS HEATING, BLINKS WHEN CHAMBER REACHES SELECTED TEMPERATURE ABOVE AMBIENT

(4) COOL SWITCH & LIGHT--SWITCH ON--ON POSITION ALLOWS CONTROLLER TO APPLY COOLANT AUTOMATICALLY TO MAINTAIN SELECTED TEMPERATURE IN CHAMBER GREEN LIGHT IS ON STEADY WHEN CHAMBER IS COOLING.



(3) POWER SWITCH & LIGHT--SWITCH ON MAIN POWER ON WHITE LIGHT GLOWS WHEN POWER IS ON.

(2) TEMPERATURE SET DIAL--SET TO DESIRED TEMPERATURE. SELECTS CHAMBER TEMPERATURE IF MODE SWITCH IS IN MANUAL POSITION.

(1) MODE SWITCH-- SET TO MANUAL POSITION. ASSIGNS THE SELECTION OF CHAMBER TEMPERATURE TO TEMPERATURE SET DIAL OR EXTERNAL PROGRAMMER.

MANUAL POSITION: TEMPERATURE SET DIAL DETERMINES CHAMBER TEMPERATURE.

PROGRAM POSITION: PROGRAMMING RESISTANCE CONNECTED TO PROGRAM JACK AT REAR OF UNIT SELECTS CHAMBER TEMPERATURE.

CAUTION: ALWAYS CONNECT SAFETY PLUG (AT REAR OF CHAMBER) WHEN AN EXTERNAL PROGRAMMER IS NOT BEING USED.

THERMOMETER- INDICATES CHAMBER TEMP. IN TEST VOLUME.

OPERATING INSTRUCTIONS:

A. INSTALL THE CHAMBER, CONNECT POWER CORD TO SUITABLE OUTLET & COOLANT SUPPLY TO VALVE INLET.

B. FOLLOW STEPS 1 THRU 5.

OPERATING INSTRUCTIONS
FIGURE 1

2 OPERATING INSTRUCTIONS

2.1 Installation - The left hand side of unit must have sufficient clearance to allow adjustment of the failsafe (figure 1).

2.2 Power Connection - Power connection should be an AC power source rated at 240V 50/60 H_z single phase, 30 amp. The chamber must be connected to earth ground (green wire).

2.2.1 Delta chambers that operate on 240 VAC split the incoming phases for the coolant valve solenoid, failsafe relay, blowers and for the controller. The heater circuit operates on 240 VAC.

2.3 Liquid Coolant - Liquid Carbon Dioxide (LCO_2) - 1050 psi system (standard). Optional systems are LCO_2 - 300 psi, and Liquid Nitrogen (LN_2) - 100 psi.

2.3.1 Liquid Carbon Dioxide - 1050 psi system.

2.3.1.1 Test the bottle by releasing a small amount of LCO_2 into a white handkerchief. Any brown stain indicates rust which would clog the filter and valve in the chamber. A wet handkerchief indicates the presence of water which would either freeze in the valve or clog the injector nozzle. Crack the LCO_2 valve on the cylinder open and notice the spray. It should be a dense, white cloud. It will look thin and grey when the tank is almost empty. An almost empty tank will not give proper cooling and should not be used. Connect the tank of LCO_2 to the rear of the chamber with the high-pressure hose and fittings which are supplied. Place a small amount of sealing compound on the threads of the male fitting to prevent leakage. DO NOT LET ANY SEALING COMPOUND GET INTO THE VALVE INLET ON THE REAR OF THE CHAMBER. Open the bottle and check for leaks which show as frosty spots on the hose or fittings.

2.3.2 Liquid Carbon Dioxide - 300 psi Low Pressure system.

2.3.2.1 When the in-plant use of liquid CO_2 exceeds approximately 1000 to 2000 pounds per month, a bulk liquid storage system may be installed to reduce the cost of coolant. Chambers being operated with this type of system have to be fitted with a different CO_2 valve and injector than used on a 1050 psi system. Contact Delta for information concerning valve replacement. If new chambers are ordered for use with a bulk storage 300 psi system, the fact should be stated on the order.

NOTE: The bulk storage system should be of the recirculating type if possible. If not, the supply should be located as close as possible to the chamber to minimize gas formation in the supply line. This is particularly important in low volume usage systems as the insulation and fluid flow are the factors that prevent boiling of CO_2 in the supply line. Gaseous CO_2 is not an effective coolant.

2.3.2.2 All lines, valves and connecting hoses should be blown out before the chamber is connected. Water is very troublesome and is apparently inherent in some low-pressure refrigerated supplies. If lines are opened to bleed off excessive pressure at shutdown, close them to prevent contamination by condensed moisture. This will help to keep ice from forming in the control valve.

2.4 Liquid Nitrogen

2.4.1 Operation to temperatures as low as -184°C is possible with LN_2 as the coolant. The calibration of the TEMPERATURE SET Dial will be somewhat non linear at temperatures lower than -156°C. A temperature in the chamber of -184°C will be obtained with a dial setting of approximately -176°C.

CAUTION

Oxygen in the air surrounding the chamber inner liner and in the insulation can be liquified at temperatures at or below -182°C. This creates an oxygen rich atmosphere surrounding the heater area. The chamber tends to be self purging as the nitrogen replaces the usual atmosphere near the heaters. Any mixture of oil and liquid oxygen can be explosive, therefore extreme care must be used during operation at very low temperatures.

2.4.2 A 100 psi valve and stainless steel, polyurethane foam insulated, injector assembly is used for the liquid nitrogen applications. LCO_2 from a tank will not operate properly in a chamber equipped for LN_2.

2.4.3 Connect a liquid nitrogen liquid withdrawal container to the LN_2 input of the chamber with an insulated transfer line. A relief valve should be installed in the line with a relief pressure between 60 and 100 psi for a 2700 cubic foot 50 psi liquid withdrawal container.

2.5 Adjusting the Failsafe - (Failsafe is located in chamber l.h. side)

2.5.1 To adjust the FAILSAFE high temperature protection unit, it is first necessary to remove the cover plate. Adjustment is made by rotating the slotted FAILSAFE control. The trip temperature is increased by rotating the control counterclockwise and is lowered by turning the control clockwise. The FAILSAFE setting is preset at the factory at +315°C (maximum rating of standard chamber). If it is desirable to change the setting to a lower temperature setting, operate the chamber at the maximum temperature desired. Adjust the FAILSAFE until it is on the verge of tripping.

CAUTION

Do not rotate the FAILSAFE setting more than one full turn lower than the trip point, as this can damage the unit.

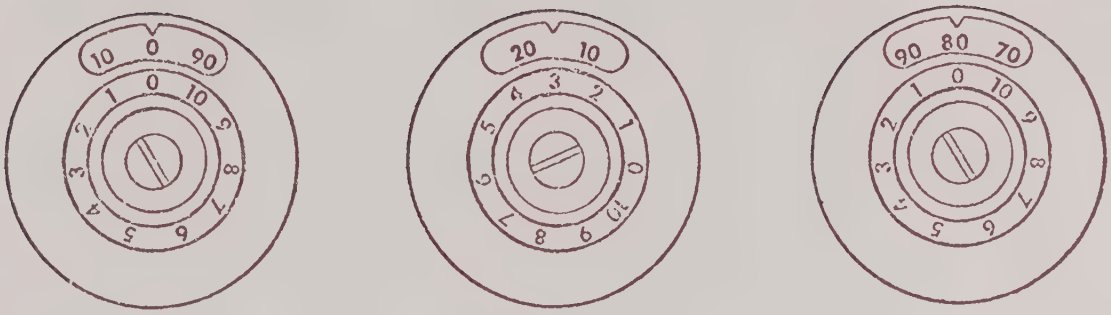
2.6 Reading the Temperature Setting of the Dial Indicator - See Figure 2.

2.6.1 Refer to example A - Set both dials at zero.

2.6.2 One complete rotation of the knob equals 100 . Clockwise is plus (+) degrees (F. or C) and counter-clockwise is minus (-) degrees. Each rotation of the knob is indicated by the small dial nearest the knob.

2.6.3 The large dial indicates each degree, every tenth numbered. Thus, as in example B, the large dial is set at 15, the small dial is beyond 3, therefore the setting is +315 .

2.6.4 When setting to a minus (-) temperature it is necessary to subtract the degrees from 100, i.e., 20 from 100 equals "80" reading on the large dial to have a setting of -20 . This is shown in example C. It will be noted that the zero on the small dial is just to the left of the marker. Also, on the models having a range greater than -100 , it is necessary to keep track of the counterclockwise rotation of the knob.



A
(0°)

B
(+315°)

C
(-20°)

FIGURE 2
TEMPERATURE SET DIAL

2.7 Programming

2.7.1 Connect the correct resistances between pins 1 and 3 of the PROGRAM Jack. Set the MODE Switch to PROGRAM and the HEAT and COOL switches to their ON positions. The controller will apply heat or coolant as needed to obtain the programmed temperature.

2.7.2 A Safety plug is provided with the chamber and should be kept connected to the PROGRAM input whenever an actual programmer or actual resistance is not connected. The safety plug will prevent the chamber from accidently being programmed to a very high temperature if the MODE Switch is placed in the PROGRAM position with an open PROGRAM input.

2.7.3 The safety plug disables the heat and cool circuits of the controller when the MODE Switch is placed in the PROGRAM position.

3 CHAMBER & CONTROLLER DESCRIPTION

3.1 Chamber

3.1.1 The test chamber is a precision environmental test unit having a stainless steel interior, aluminum outer case and fiberglas insulation. The air circulation is closed and provided by 140 CFM blowers (see figure 9). The chamber is heated by applying full wave power to bobbin would nichrome heating elements via the heat switch.

3.1.2 The chamber is cooled by injecting liquid CO_2 (liquid nitrogen in the LN_2 models) into the air stream through an expansion nozzle. The coolant flow is metered by a solenoid valve, controlled by the cool solid state switch.

3.1.3 The temperature control system is shown in block diagram form as Figure 10.

3.2 Solid State Controller

3.2.1 The controller compares the resistance of the temperature probe to the resistance of the TEMPERATURE SET Potentiometer (program resistance). These three situations directly correspond to the chamber temperature being lower than, equal to, or higher than desired. The controller applies heat, coolant, or withholds both to obtain and maintain the selected temperature in the chamber.

3.2.3 NOTICE; the controller is a three mode unit, i.e.;

(a) Heat only
(b) No heat or coolant
(c) Coolant only

This mode of control ensures that LCO_2 or LN_2 is not wasted in a continuous cycling of the heaters and coolant valve such as would be the case for a simple two state output controller.

3.2.4 Further information on the controller may be found in the complete Type III Controller Manual included as part of this information package.

3.3 Null Detector Circuit

3.3.1 A contact closure is provided at the rear when the chamber reaches the indicated SET Point of the controller. This contact closure may be used to signal that the chamber has reached selected temperature.

3.3.2 The Delta Design Model 9307 HI-LO Step Programmer, Model 9311 TEN STEP Programmer, and the Model 9312 HI-LO AMBIENT Programmer utilize the null contacts to start theim timers when they are used with the chamber. This contact closure feature is most useful in automatic test programming applications.

TROUBLE SHOOTING: ELECTRICAL

HOW TO USE THIS CHART

1. Turn Mode Switch to Manual.
2. Note Thermometer Reading (Chamber Temperature)
3. Turn Heat and Cool Switches On.
4. Turn Temperature Set Control 50° Higher than Chamber Temperature and note the conditions of the Heat and Cool Lamps.
5. Turn Temperature Set Control 50° Lower than Chamber Temperature and note the conditions of the Heat and Cool Lamps.

These two situations determine the correct block to read in the chart:

6. Enter the Chart at the Top for the conditions observed in step 4. (50° Higher than Chamber Temperature.)
7. Enter the Chart at the Left Side for the conditions observed in step 5. (50° Lower than Chamber Temperature.)

	LIGHT STATE WITH TEMPERATURE SET DIAL 50° HIGHER THAN CHAMBER TEMP.			
LIGHT STATE WITH TEMPERATURE SET DIAL 50° LOWER THAN CHAMBER TEMP.	RED - OFF GREEN - OFF	RED - ON GREEN - OFF	RED - OFF GREEN - ON	RED - ON GREEN - ON
RED - OFF GREEN - OFF	Probe Element shorted to case. (Replace) Failure on Amplifier P.C. Board. (Trace signal with scope) Transformer Winding open.	Cool Circuit has failed. Trace signals with scope.		
RED - ON GREEN - OFF		Probe shorted out. Temp. set Pot. — open. Cool Anticipator winding open. Check between Terminal A and Case of Q8 for 10Ω.		
RED - OFF GREEN - ON	Failsafe Relay K1 not energizing. Coil resistance will be Approx. 10K. Failsafe open. Heat Triac failed.	NORMAL	Probe Open. Temp. Set. Pot. shorted. Heat Anticipator Winding open: Check between B and Case of Q9 for 10Ω.	Cool Circuit has failed — Trace signal with scope.
RED - ON GREEN - ON		Heat circuit has failed — Trace signal with scope. Triac failed.		

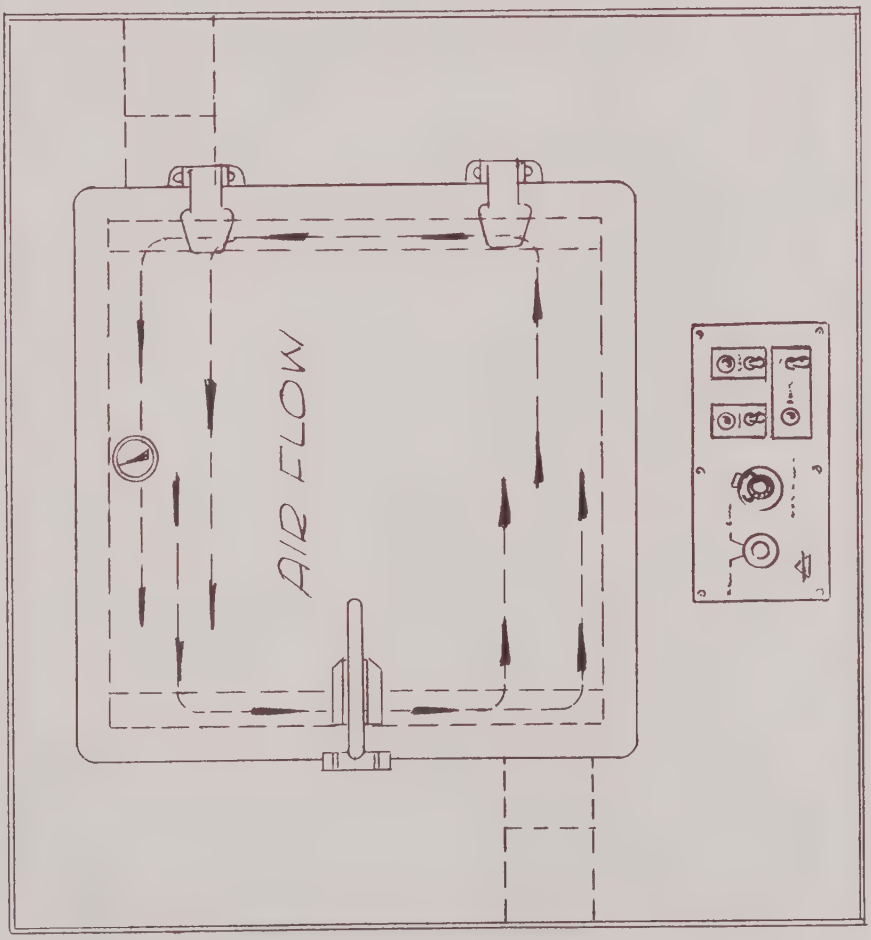
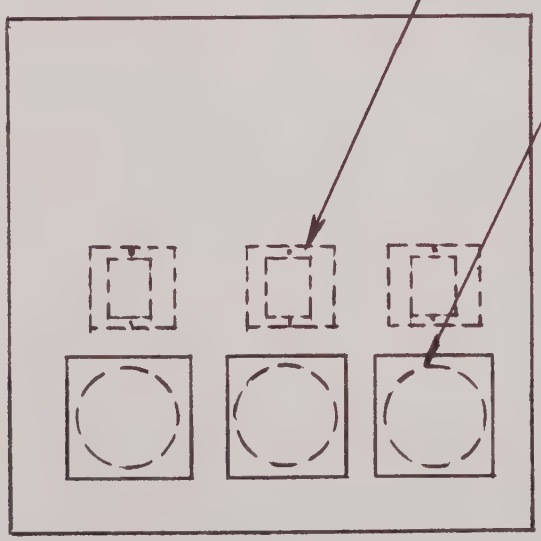


FIGURE 3
MODEL 7600
AIR FLOW PATTERN



HEATER ASSY. REMOVAL:
1. REMOVE POWER FROM CHAMBER.
2. REMOVE SIDE COVER
3. REMOVE SCREWS FROM HEATER ASSY.
4. DISCONNECT WIRES

BLOWER MOTOR REMOVAL:
1. REMOVE POWER FROM CHAMBER
2. REMOVE SCREWS FROM GRILL
3. REMOVE (2) BLOWER MOTOR ASSY. SCREWS
4. PULL OUT MOTOR ASSY & REMOVE WIRE NUTS

COMPONENT REMOVAL - L.H. SIDE
(R.H. SIDE IS SIMILAR)

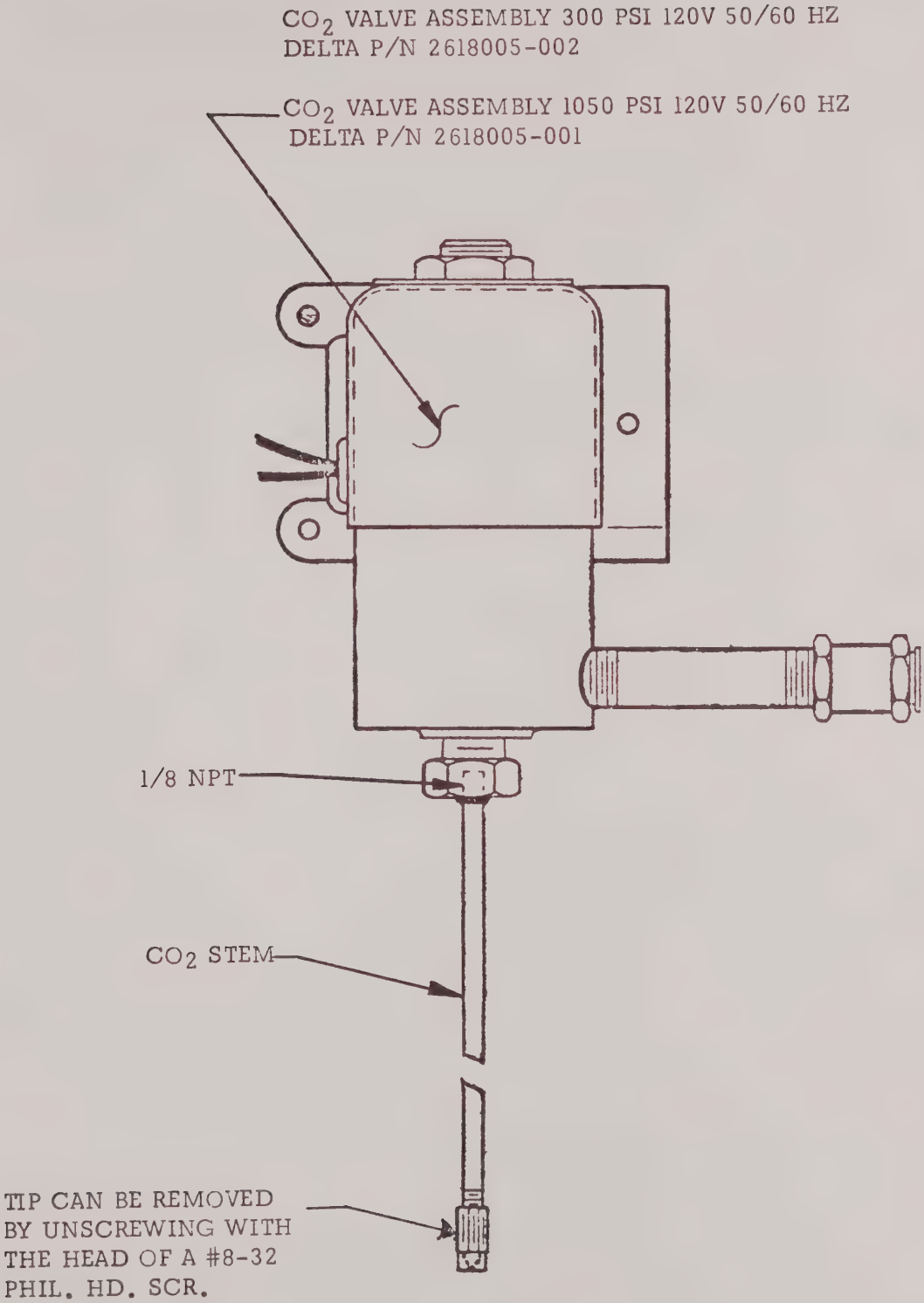

CO_2 VALVE ASSEMBLY 300 PSI 120V 50/60 HZ
DELTA P/N 2618005-002
CO_2 VALVE ASSEMBLY 1050 PSI 120V 50/60 HZ
DELTA P/N 2618005-001
1/8 NPT
CO_2 STEM
TIP CAN BE REMOVED
BY UNSCREWING WITH
THE HEAD OF A #8-32
PHIL. HD. SCR.

FIGURE 5
CO_2 VALVE ASSEMBLY

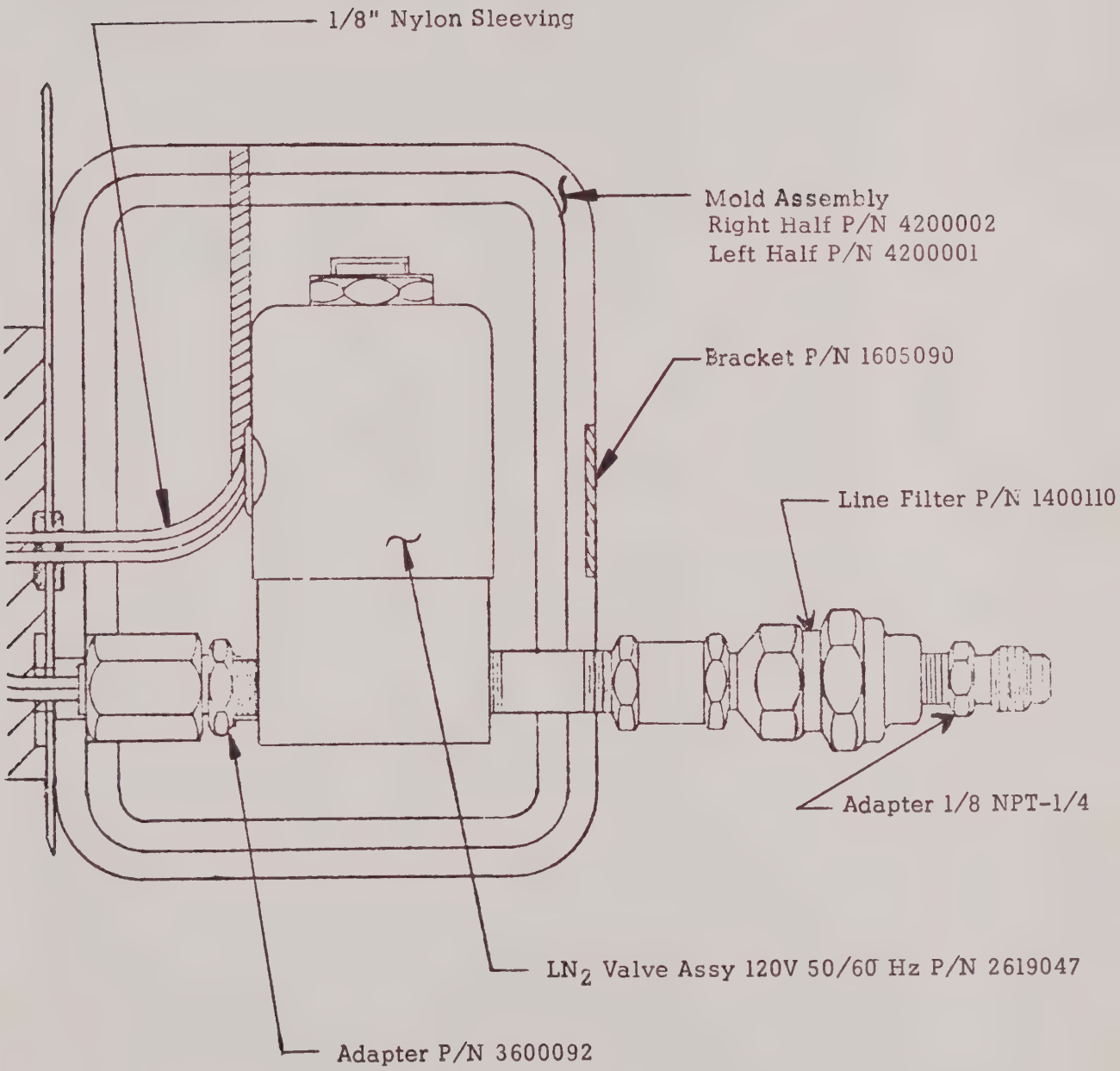
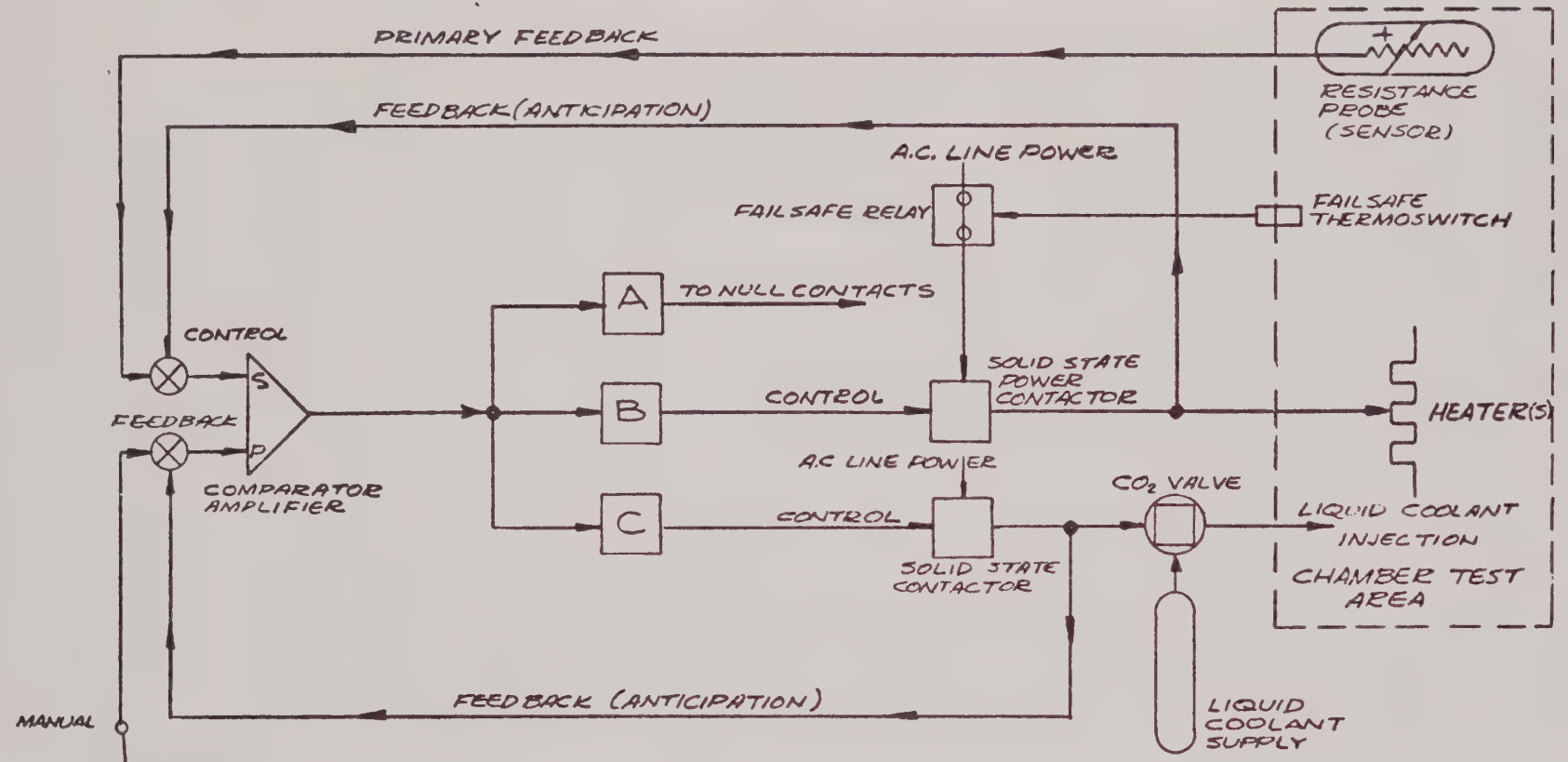


FIGURE 6

LN_2 VALVE ASSEMBLY

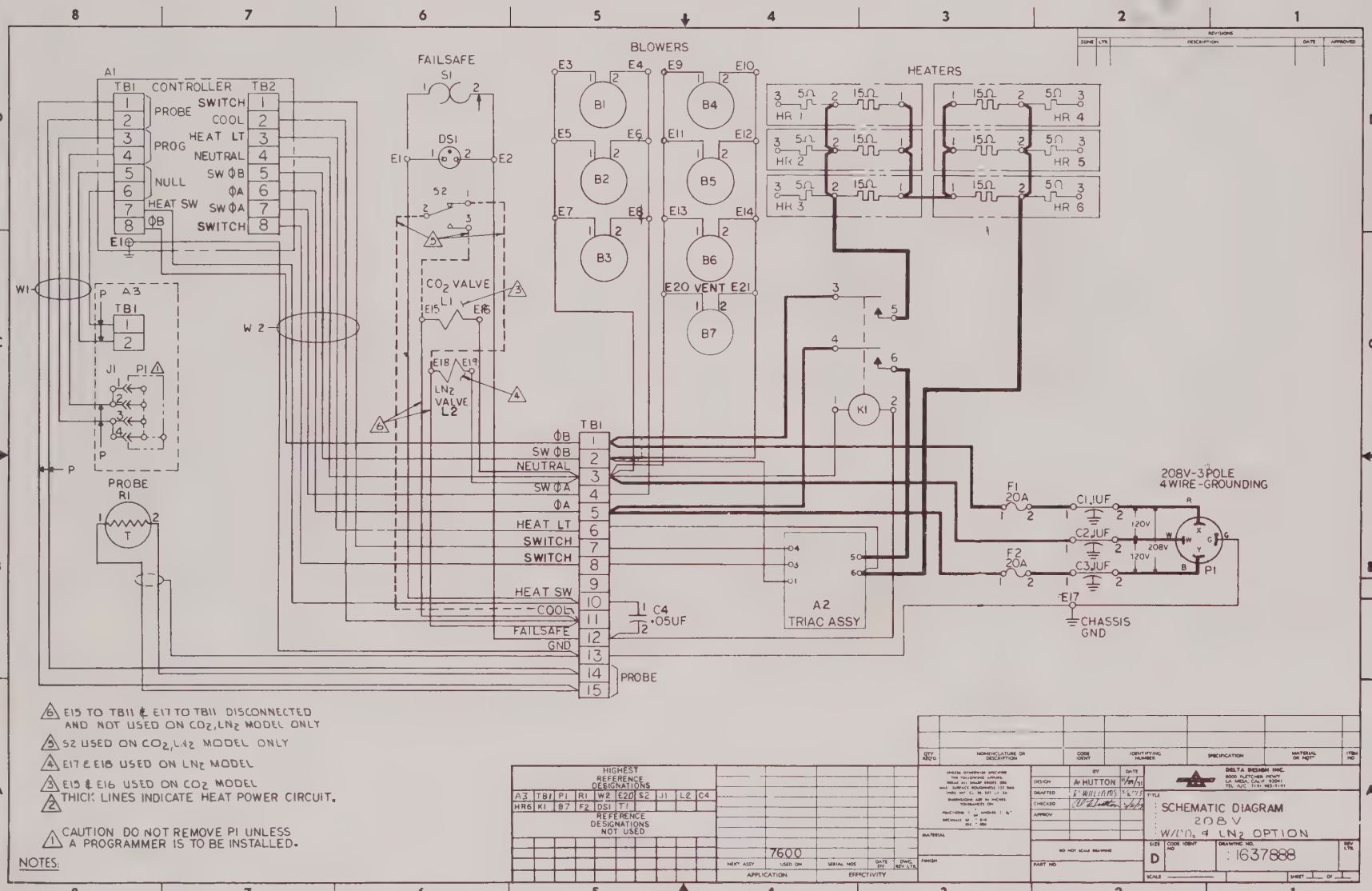


TEMPERATURE CONTROL SYSTEM
SOLID STATE, TYPE III
DELTA DESIGN INC.

A = NULL DETECTOR SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /P/ = /S/

B = HEAT. SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /P/ INPUT AT AMPLIFIER
GREATER THAN /S/

C = COOL. SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /S/ GREATER THAN /P/



6 E15 TO TB11 & E17 TO TB11 DISCONNECTED AND NOT USED ON CO_2, LN_2 MODEL ONLY

5 S2 USED ON CO_2, LN_2 MODEL ONLY

4 E17 & E18 USED ON LN_2 MODEL

3 E15 & E16 USED ON CO_2 MODEL

2 THICK LINES INDICATE HEAT POWER CIRCUIT.

1 CAUTION DO NOT REMOVE P1 UNLESS A PROGRAMMER IS TO BE INSTALLED.

NOTES:

HIGHEST REFERENCE DESIGNATIONS									
A3	TB1	P1	R1	W2	E20	S2	J1	L2	C4
HR6	K1	B7	F2	DS1	T1				

REFERENCE DESIGNATIONS NOT USED

NEXT ASSY APPLICATION	USED ON	SERIAL NOS EFFECTIVITY	DATE EFF	DWG. REV. LTR.
7600				

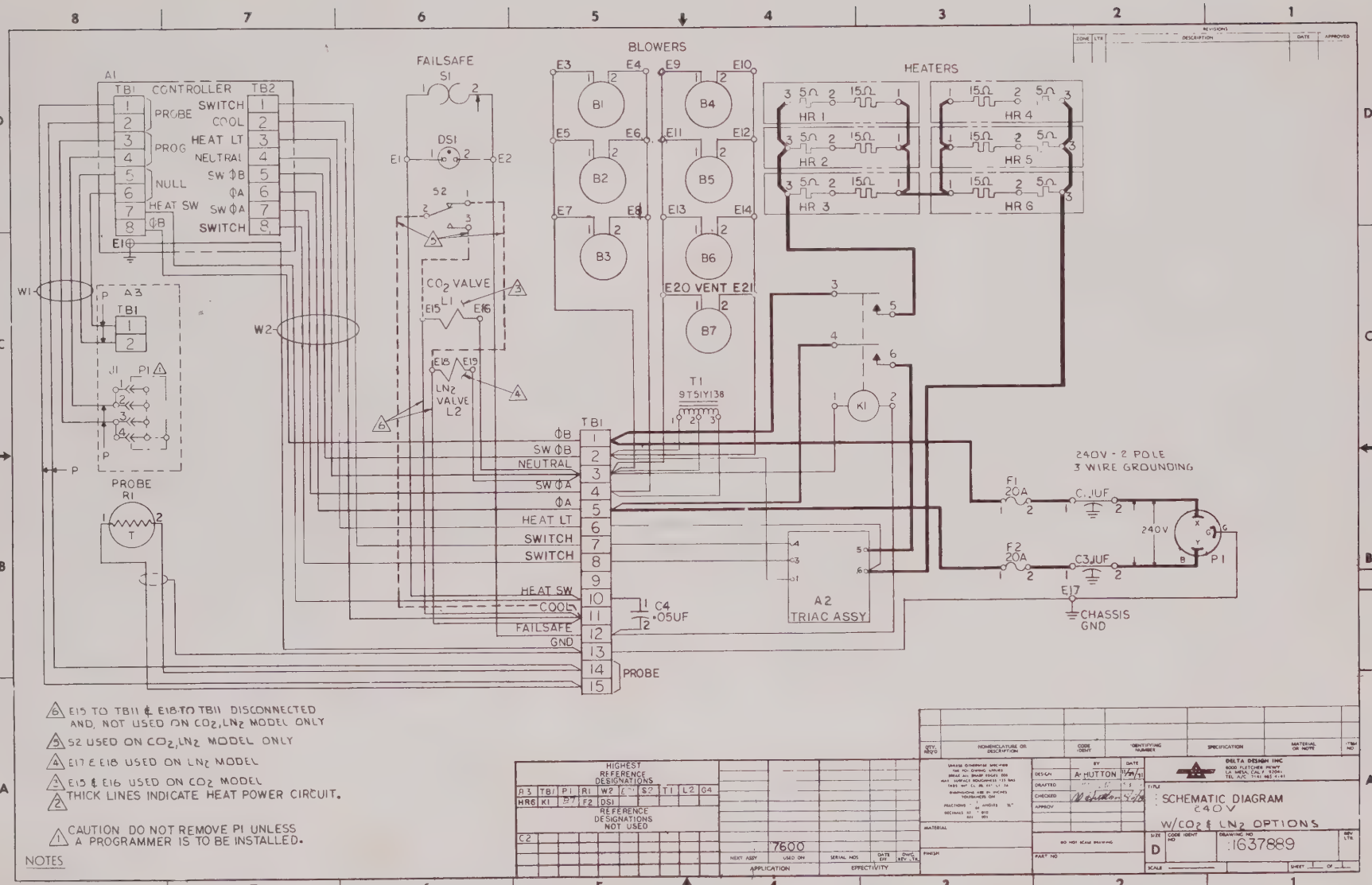
DESIGN	A. HUTTON	11/29/71
DRAFTED	L. WILLIAMS	3/6/72
CHECKED		
APPROV		

DELTA DESIGN INC.
8000 FLETCHER PKWY
LA MESA, CALIF. 92041
TEL A/C 714) 465-9141

TITLE: SCHEMATIC DIAGRAM 208V W/CO_2 & LN_2 OPTION

SIZE D | CODE IDENT NO | DRAWING NO. 1637888 | REV LTR

SCALE | SHEET OF



6 E15 TO TB11 & E18 TO TB11 DISCONNECTED AND, NOT USED ON CO_2,LN_2 MODEL ONLY

5 S2 USED ON CO_2,LN_2 MODEL ONLY

4 E17 & E18 USED ON LN_2 MODEL

3 E15 & E16 USED ON CO_2 MODEL

2 THICK LINES INDICATE HEAT POWER CIRCUIT.

1 CAUTION DO NOT REMOVE P1 UNLESS A PROGRAMMER IS TO BE INSTALLED.

NOTES

HIGHEST REFERENCE DESIGNATIONS: A3 TB1 P1 R1 W2 S2 T1 L2 G4 HR6 K1 B7 F2 DS1

REFERENCE DESIGNATIONS NOT USED: C2

7600

NEXT ASSY USED ON

APPLICATION

SERIAL NOS DATE EFF DWG REV No.

EFFECTIVITY

DELTA DESIGN INC
6000 FLETCHER PKWY
LA MESA, CAL / 92041
TEL A/C 714 465 4141

DESIGN A. HUTTON 11/7/71
DRAFTED
CHECKED
APPROV

TITLE: SCHEMATIC DIAGRAM 240V W/CO_2 & LN_2 OPTIONS

SIZE D

CODE IDENT NO

DRAWING NO 1637889

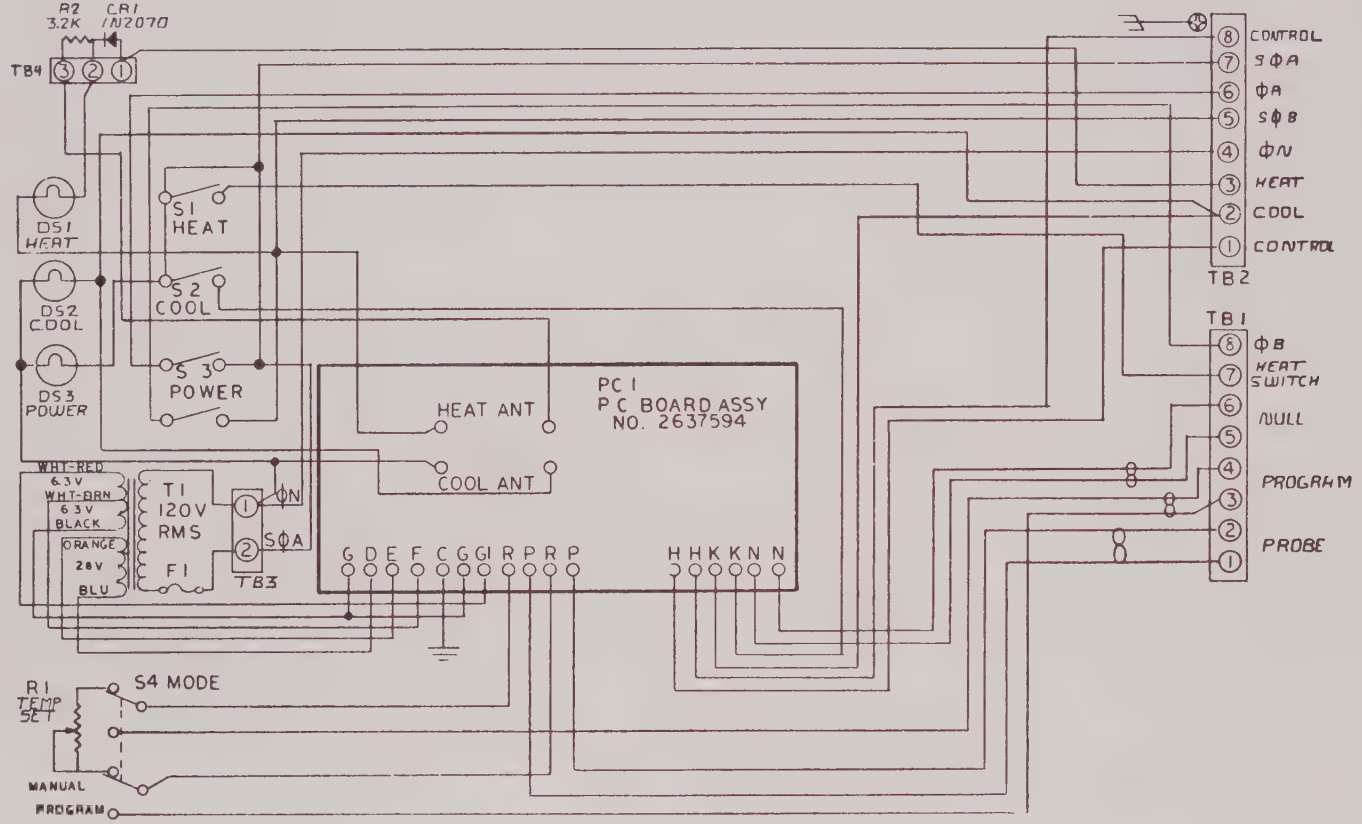
REV LTR

SCALE

SHEET

DO NOT SCALE DRAWING

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD



DASH	QTY	NEXT ASSY	USED ON	SERIAL NO.	DATE EFF	DWG REV
APPLICATION				EFFECTIVITY		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03; .XXX ± .010
ANGLES: 0° 30'
HOLE TOLERANCES

MATERIAL
FINISH

ENGINEERING ACTIVITY

DESIGN	
DRAFTED	R WILLIAMS 5-23-73
CHECKED	
APPROV	
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF COMU INC.
8725 KEARNY VILLA RD SAN DIEGO, CA. 92123 - TEL (714) 292-9000

TITLE: A1172
7600 CONTROLLER
SCHEMATIC

SIZE	CODE IDENT	
C		A1172

SCALE

SHEET 1 OF 1

FINISH (IF APPLICABLE)

MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

FORM 4-17-72

DELTA DESIGN, INC.
5725 KEARNY VILLA RD
SAN DIEGO, CA. 92123
TEL. (714) 292-5000

NOTES:

7500

7600-0573

ITEM	QTY	DRAWING NUMBER	DESCRIPTION	MANUFACT AND NO.	STK OR PART NO.	FAB CODE
01	1		TERM BLK		1400510	
02	1		TERM BLK		1400513	
03	1		TERM BLK		1400512	
04	1		RELAY, HEAT CUT		1400218	
05	2		CAPACITOR .1 MICRO FARED 250V		0800007	
06	1		CAPACITOR .05 MICRO FARED 400V		0700520-400	
07	1		CORD 12/3		1500393	
08	1		PLUG POWER		2000014	
09	1		CONNECTOR		2000044	
10	2		FUSE 20 AMP		1400038	
11	2		FUSE HOLDER		1400050	
12	1		TERM BLOCK		1400509	
13	1		STRAIN RELIEF		1500077	
14	1		FAN VENT		2100063	
15	6		FEET		1500419	
16	1		LAMP FAILSAFE		1400082	
17	1		SWITCH		1400160	
18	1		COUPLING FAILSAFE		1500453	
19	1		PROBE		230031	
20	16		SPACER		4100098	
21	1		THERMOMETER, 8 INCH		2300011	
22	1		TERM BLOCK		1400521	
23	1		TRIAC ASSY		2635445	
24	1		INJECTOR ASSY -CO_2		2618707	
25	6		MOTOR ASSY		2621001	
26	6		HEATER ASSY		2635876	

REVISIONS

REV	DATE	BY	APPD	DESCRIPTION

TITLE: 7600 SPARE PARTS

NEXT ASSY P/L:

BY	R. Williams	5-10-73
CHK		
APPD		

P/L | REV | SHT | OF

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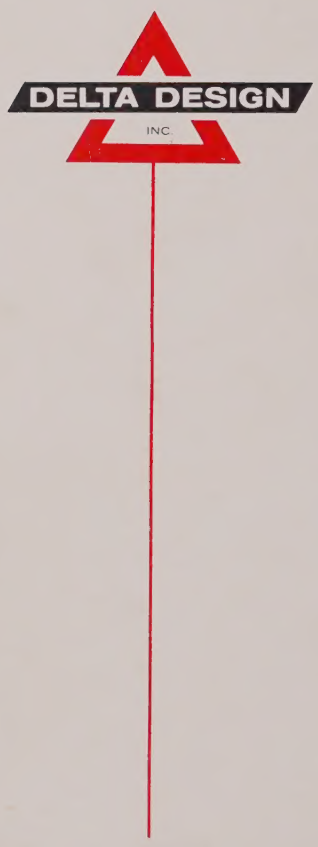
WARRANTY

Delta Design Inc. warrants the performance and parts of this unit for a period of 90 days. Where components are warranted by the manufacturer (other than Delta Design Inc.,) such warranty is transferred to the customer.



SAN DIEGO, CALIFORNIA

MP MASTER
MA32443